US009410858B2

(12) **United States Patent**
Oguchi et al.

(10) **Patent No.: US 9,410,858 B2**
(45) **Date of Patent: Aug. 9, 2016**

(54) **OPTICAL SCALE HAVING WIRES, METHOD FOR MANUFACTURING OPTICAL SCALE HAVING WIRES,AND OPTICAL ENCODE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 110 days.

(21) Appl. No.: **14/355,149**

(22) PCT Filed: **Oct. 31, 2012**

(86) PCT No.: **PCT/JP2012/078169**

§ 371 (c)(1),
(2) Date: **Apr. 29, 2014**

(87) PCT Pub. No.: **WO2013/065737**

PCT Pub. Date: **May 10, 2013**

(65) **Prior Publication Data**

US 2014/0306099 A1 Oct. 16, 2014

(30) **Foreign Application Priority Data**

Oct. 31, 2011 (JP) 2011-239795
Oct. 31, 2011 (JP) 2011-239797
Oct. 31, 2011 (JP) 2011-239800
Aug. 30, 2012 (JP) 2012-190487

(51) **Int. Cl.**
G01L 3/12 (2006.01)
G01D 5/347 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G01L 3/12*** (2013.01); ***B62D 5/0481*** (2013.01); ***G01D 5/345*** (2013.01); ***G01D 5/3473*** (2013.01); ***G01D 5/34707*** (2013.01); ***G01D 5/34715*** (2013.01); ***G01L 3/08*** (2013.01)

(58) **Field of Classification Search**
CPC . B62D 5/0481; G01D 5/345; G01D 5/34707; G01D 5/34715; G01D 5/3473; G01L 3/08; G01L 3/12
See application file for complete search history.

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(57) **ABSTRACT**

An optical scale, a method for manufacturing an optical scale, and an optical encoder. The optical scale includes a plurality of wires provided thereon so that the wires do not intersect each other and each of the tangential directions of the respective wires changes continuously. The optical encoder includes the optical scale, a light source, an optical sensor, and a computing unit. The optical sensor includes a first polarizing layer that splits incident light that is light source light from the light source passed through or reflected on the optical scale and being incident on the first polarizing layer to a first polarization direction, a second polarizing layer that splits the incident light to a second polarization direction, a first photoreceiver that receives first polarized light split by the first polarizing layer, and a second photoreceiver that receives second polarized light split by the second polarizing layer.

13 Claims, 92 Drawing Sheets